

## CLAIMS

What is claimed is:

1. A system for shopping in a remote physical location over a computer network comprising  
5           a user interface, remote from said physical location and coupled to said computer network,  
said user interface transmitting control signals designating selected regions of said physical  
location, said user interface displaying images received over said computer network; and  
          an image acquisition system coupled to said computer network, said image acquisition  
system transmitting an image of a selected region in said remote physical location in response to  
10       said control signals;  
          wherein a user of said shopping system can select a product based on said image received  
and displayed by said user interface.
2. The system of claim 1 wherein said user interface includes a field into which said user may  
15       identify said product.
3. The system of claim 1 wherein said user interface includes a list of products appearing in the  
selected region displayed by said user interface.
- 20       4. The system of claim 1 wherein said user interface includes vendor contact information.
5. The system of claim 1 further comprising a parameter region database, wherein said parameter  
region database includes a list of products and regions in said remote physical location for  
corresponding ones of said products, and a processor coupled to said parameter region database,  
25       said processor also being coupled to receive a selected region, said processor accessing said  
parameter region database according to said selected region to retrieve the products corresponding  
to said selected region, said processor further being coupled to transmit said retrieved products to  
said user.
- 30       6. The system of claim 5 wherein said regions stored in said database are defined in relation to at

least one positional parameter of said image acquisition system.

7. The system of claim 5 wherein said image acquisition system includes a camera system; and wherein said regions stored in said database are defined by at least one of the pan, tilt and zoom values of said camera system.

8. The system of claim 5 wherein said image acquisition system includes a camera system; and wherein said regions stored in said database are defined according to a range of pan, tilt and zoom values of said camera system.

9. The system of claims 5, 6, 7, or 8 wherein said user interface displays a list of said retrieved products.

10. The system of claim 9 wherein said list of retrieved products includes hyper-links.

11. The system of claim 1 wherein said remote physical location is a retail space.

12. The system of claim 11 wherein said retail space includes products from at least two vendors.

13. The system of claim 1 wherein said remote physical location comprises at least two retail spaces.

14. The system of claim 1 wherein said remote physical location is an auction space.

15. The system of claim 1 wherein said remote physical location is a pre-owned sales lot.

16. The system of claim 1 wherein said image acquisition system includes a camera system.

17. The system of claim 16 wherein said camera system includes at least one computer-controlled, pan-tilt-zoom camera.

18. The system of claim 16 or 17 wherein said camera system includes at least one video camera.

19. The system of claim 16 or 17 wherein said camera system includes at least one still image camera.

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20. The system of claim 16 wherein said camera system comprises an array of cameras.

21. The system of claim 16 wherein said camera system includes a wide-angle view system.

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22. The system of claim 16 wherein said camera system includes a parabolic mirror.

23. The system of claim 16 wherein said camera system includes a fish-eye lens.

24. The system of claim 16 or 17 wherein the angular position of said camera system is fixed.

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25. The system of claim 16 or 17 wherein the magnification (zoom) of said camera system is fixed.

26. The system of claim 16 or 17 wherein the angular position of said camera system is adjustable.

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27. The system of claim 16 or 17 wherein the magnification (zoom) of said camera system is adjustable.

28. The system of claim 26 wherein said angular position of said camera system is adjustable via said user interface.

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29. The system of claim 26 wherein said angular position of said camera system is remotely controlled.

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30. The system of claim 1 wherein said computer network is a wireless computer network.

31. The system of claim 1 wherein said computer network includes at least one physical coupling.

5 32. The system of claim 1 wherein said computer network is an electronic network.

33. The system of claim 1 wherein said computer network is an optical network.

34. The system of claim 1 wherein said selected region contains at least one product.

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35. The system of claim 34 wherein said selected region contains a partial view of said product.

36. The system of claim 34 or 35 wherein said selected region includes identification data corresponding to said product.

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37. The system of claim 1 wherein said selected region contains at least two products.

38. The system of claim 1 wherein said user interface, in response to a product selection by the user, transmits a command associated with said selected product.

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39. The system of claim 38 wherein said command includes a request for data related to said selected product.

40. The system of claim 39 wherein said data includes a price for said selected object.

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41. The system of claim 39 wherein said data includes the availability of said selected product.

42. The system of claim 38 wherein said command includes a request to purchase said selected product.

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43. The system of claim 42 wherein said request to purchase includes an electronic payment for the selected product.

44. The system of claim 42 wherein said request to purchase said selected product is processed by an electronic fulfillment system.

45. The system of claim 1 further comprising a facility for on-line interaction among a plurality of users.

46. The system of claim 1 wherein said user interface further includes a virtual shopping cart, said virtual shopping cart comprising thumbnail images of selected products.

47. The system of claim 46 wherein said thumbnail images include hyper-links to live images of said corresponding selected products in said remote physical location.

48. The system of claim 1 further comprising a product database, wherein said database includes a list of products and product identification numbers for corresponding ones of said products, and a processor coupled to said database, said processor also being coupled to receive a product identification number, said processor accessing said database according to said product number to retrieve the product corresponding to said product identification number, said processor further being coupled to transmit said retrieved product.

49. The system of claim 48 wherein tags located on or near said products include a series of geometric shapes of predetermined color, wherein said series of geometric shapes of predetermined color encode for said product identification numbers and wherein said processor recognizes said tags appearing in said images and derives said product identification numbers from said tags.

50. The system of claim 1 wherein said user interface comprises a page-based interface.

51. The system of claim 1 wherein said user interface comprises an applet.

52. The system of claim 1 wherein said user interface comprises a browser plug-in.

53. An apparatus for shopping in a remote physical location over a computer network comprising  
a server operably coupled to said computer network to receive requests from users;

5 an image acquisition system operably coupled to said server, said image acquisition system  
capturing an image of a selected region in said remote physical location in response to control  
signals from said server, said image acquisition system further transmitting said image to said  
server;

10 said server, in response to a request from a user, sending control signals to said image  
acquisition system and receiving an image of a selected region in said remote physical location; said  
server transmitting interface data to said user; said interface data including said image, said  
interface data allowing said user to select a product located in said selected region.

54. The apparatus of claim 53 wherein said interface data relates to a page-based interface.

55. The apparatus of claim 53 wherein said interface data is used by a browser plug-in.

56. The apparatus of claim 53 wherein said interface data is used by an applet .

20 57. The apparatus of claim 53 wherein said interface data is an HTML document.

58. The apparatus of claim 53 or 54 wherein said interface data includes controls that allow said  
user to remotely control said image acquisition system via said server.

25 59. The apparatus of claim 54 wherein said interface data allows said user to select regions in said  
remote physical location for viewing.

60. The apparatus of claim 54 wherein said interface data allows said user to adjust the  
magnification of said image acquisition.

61. The apparatus of claim 58 or 60 wherein said interface data allows said user to adjust the angular position of said image acquisition system.

62. The apparatus of claim 54 wherein said interface data includes a field into which a user may input a product identification.

63. The apparatus of claim 54 wherein said image included in said interface data is an HTML image map.

64. The apparatus of claim 53 wherein said interface data comprises an applet that returns the x- and y-coordinates of the point in said image on which the user clicks.

65. The apparatus of claim 53 wherein said interface data comprises an applet that returns the x- and y-coordinates of the region in said image selected by the user.

66. The apparatus of claim 53 further comprising a product database operably coupled to said server, said product database including product identifications and product information for corresponding ones of said product identifications, wherein said server, in response to a request containing a product identification, accesses said product database according to said product identification to retrieve said corresponding product information.

67. An apparatus for shopping in a remote physical location over a computer network comprising a parameter region database having a list of products located at said remote physical location, said parameter region database including regions in said remote physical location for corresponding ones of said products;

a processor coupled to said database, said processor also being coupled to said computer network to receive a selected region, said processor accessing said parameter region database according to said selected region to retrieve the products corresponding to said selected region.

68. The apparatus of claim 67 further comprising an image acquisition system located in said

remote physical location;

wherein said processor is operably connected to said image acquisition system;

said image acquisition system transmitting an image of a selected region in said remote physical location in response to control signals from said processor.

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69. The apparatus of claim 68 wherein said processor receives a designation of a selected region from a user and transmits control signals designating said selected region to said image acquisition system; and wherein said processor receives an image of said selected region from said image acquisition system and transmits said image to said user.

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70. The apparatus of claim 69 wherein said processor further transmits, to said user, a list of products corresponding to said selected region.

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71. The apparatus of claim 68 wherein said regions stored in said parameter region database are defined in relation to the positional parameters of said image acquisition system.

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72. The apparatus of claim 68 wherein said image acquisition system includes a camera system, wherein movement of said camera system includes pan, tilt and zoom; and wherein said regions stored in said parameter region database are defined by at least one of the pan, tilt and zoom values of said camera system.

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73. The apparatus of claim 68 wherein said image acquisition system includes a camera system, wherein movement of said camera system includes pan, tilt and zoom; and wherein said regions stored in said parameter region database are defined according to a range of pan, tilt and zoom values of said camera system.

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74. The apparatus of claim 68 further comprising a product database operably coupled to said processor, wherein said product database contains a list of products and product information corresponding to said products;

wherein said processor receives a designation of a selected region from a user and transmits



control signals corresponding to said selected region to said image acquisition system;

and wherein said processor receives an image of said selected region from said image acquisition system, assembles interface data, said data including said image, and transmits said interface data to said user.

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75. The apparatus of claim 74 wherein said interface data includes a list of products corresponding to said selected region from said parameter region database.

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76. The apparatus of claim 74 wherein said interface data includes a link to product information in said product database corresponding to said list of products.

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77. A method for shopping in a remote physical location over a computer network, said computer network carrying and routing data between computers connected thereto, said computers including at least one client computer associated with one or more users, at least one server associated with a provider of goods or services, said server coupled to an image acquisition system located in said remote physical location, said method comprising the steps of

(a) receiving, at a server, a request from a user;

said request including a designation of a selected region in said remote physical location;

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(b) acquiring an image of said selected region from said image acquisition system; and

(c) transmitting said interface data to said user, wherein said interface data includes said image, said interface data allowing said user to select a product located in said selected region.

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78. The method of claim 77 wherein said interface data allows said user to designate said selected region.

79. The method of claim 77 wherein said interface data includes a field in which said user may identify said product.

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80. The method of claim 77 wherein said interface data includes a list of products appearing in the image of the selected region displayed by said interface.

81. The method of claim 80 wherein said list contains at least one hyper-link.

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82. A method for shopping in a remote physical location over a computer network, said computer network carrying and routing data between computers connected thereto, said computers including at least one client computer associated with one or more users, at least one server associated with a provider of goods or services, said server coupled to a database, said database including a list of products located at said remote physical location, said database further including regions in said remote physical location for corresponding ones of said products, said server coupled to an image acquisition system located in said remote physical location, said method comprising the steps of

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(a) receiving, at said server, a request from a user;

said request including a designation of a selected region in said remote physical

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location;

(b) acquiring an image of said selected region from said image acquisition system;

(c) accessing said database to retrieve a list of products associated with said selected region;

(d) transmitting interface data to said user, said interface data including said image and said

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list of retrieved products.

83. The method of claim 82 wherein said interface data relates to a page-based interface.

84. The method of claim 82 wherein said interface data allows said user to designate said selected region.

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85. The method of claim 82 wherein said regions stored in said database are defined in relation to the positional parameters of said image acquisition system.

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86. The method of claim 82 wherein said image acquisition system includes a camera system

movable in the pan and tilt directions and having an adjustable zoom lens; and wherein said regions stored in said database are defined by pan, tilt and zoom values of said camera system.

87. The method of claim 82 wherein said image acquisition system includes a camera system  
5 movable in the pan and tilt directions and having an adjustable zoom lens; and wherein said regions stored in said database are defined according to a range of pan, tilt and zoom values of said camera system.

88. The method of claim 82 wherein a track is mounted in said physical location, wherein said  
10 image acquisition system includes a camera system movably mounted in said track, wherein said regions stored in said database are defined according to the position of said camera system in said track.

89. The method of claim 82 wherein a track is mounted in said physical location, wherein said  
15 image acquisition system includes a camera system movably mounted in said track, wherein said camera system is movable in the pan and tilt directions and having an adjustable zoom lens; and wherein said regions stored in said database are defined according to a range of pan, tilt and zoom values of said camera system and the position of said camera system in said track.

90. A method for shopping in a remote physical location over a computer network, said computer  
20 network carrying and routing data between computers connected thereto, said computers including at least one client computer associated with one or more users, at least one server associated with a provider of goods or services, said server coupled to a database, said database including a list of products located at said remote physical location, said server operably coupled to and controlling  
25 an image acquisition system, said method comprising the steps of

- (a) placing a product in a selected region of said remote physical location;
- (b) associating said selected region with at least one positional parameter of said image acquisition system; and
- (c) storing the positional parameters corresponding to said selected region in said database  
30 in association with said product.

91. The method of claim 90 wherein said image acquisition system comprises a computer-controlled, pan-tilt-zoom camera; wherein the positional parameters of said camera include pan, tilt and zoom; and wherein selected regions in said remote physical location are defined by at least one of said pan, tilt and zoom parameters of said camera.

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92. A method for shopping in a remote physical location over a computer network, said computer network carrying and routing data between computers connected thereto, said computers including at least one client computer associated with one or more users, at least one server associated with a provider of goods or services, said server coupled to a database, said database including a list of products located at said remote physical location, said server operably coupled to and controlling an image acquisition system, said method comprising the steps of

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(a) placing a product in a selected region of said remote physical location;

(b) placing a product identification tag on said product;

(c) associating said tag with said product; and

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(d) storing a representation of said tag in said database in association with said product.

93. The method of claim 92 further comprising the steps of

(e) acquiring an image of said selected region;

(f) analyzing, at said server, said image to identify said tag placed on said product;

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(g) accessing said database according to said identified tag to retrieve said product

identification.

94. The method of claim 93 further comprising the step of

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(h) transmitting interface data to said user, said interface data including said image and said product identification.

95. A method for shopping in a remote physical location over a computer network, said computer network carrying and routing data between computers connected thereto, said computers including at least one client computer associated with one or more users, at least one server associated with a provider of goods or services, said server operably coupled to an image acquisition system at said

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remote physical location, said image acquisition system capturing an image of a selected region in said remote physical location in response to control signals from said server, said server transmitting page-based interfaces including images captured by said image acquisition system, said method comprising the steps of

5 (a) receiving, at a client computer, interface data;

said interface data including an image of a selected region in said remote physical location;

said interface data allowing selection/identification of a product in said selected region;

10 (b) remotely controlling said image acquisition system via an interface to receive images of selected regions in said remote physical location; and,

(c) transmitting a product identification to said server via said interface, said product identification based on said images received and displayed by said interface.

15 96. The method of claim 95 further comprising the step of

(d) receiving, at said client computer, a purchase order form in response to said product identification.

97. The method of claim 95 further comprising the step of

20 (d) receiving, at said client computer, a product information corresponding to said product identification in response to said product identification.

98. A method for providing the on-line experience of shopping in an actual remote physical location over a computer network, said computer network carrying and routing data between

25 computers connected thereto, said computers including at least one client computer associated with one or more users, at least one server associated with a provider of goods or services, said server operably coupled to an image acquisition system at said remote physical location, said image acquisition system capturing an image of a selected region in said remote physical location in response to control signals from said server, said server receiving control signals designating  
30 selected regions in said remote physical location from said client computer, said method comprising

the steps of

(a) receiving, at said server, a request from a user, said request including a selected region in said remote physical location;

5 (b) transmitting, to said image acquisition system, control signals designating said selected region in said remote physical location;

(c) receiving, at said server, an image from said image acquisition system;

(d) storing said image in a database.

99. The method of claim 98 further comprising the step of

10 (e) repeating steps (a) - (d) a desired number of times.

100. The method of claim 99 further comprising the step of

(f) adding at least one of said images stored in step (d) to a page or document stored in said server connected to said computer network.

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101. A user interface for shopping in a remote physical location over a computer network comprising an image of a selected region in said physical location, said interface allowing selection of a product appearing in said image.

20 102. The user interface of claim 101 further comprising controls for remotely controlling an image acquisition system.